1171-30

A Meta-Analysis of Risks Versus Benefit of Oral Anticoagulation on Top of Aspirin Following Unstable Angina or Myocardial Infarction

Freek W. Verheugt, Marc A. Brouwer, Robert F. van Es, Michael D. Ezekowitz, Louise Fiore, Valentin Fuster, *University Medical Center Nijmegen, Nijmegen, The Netherlands, Thoraxcenter, Rotterdam, The Netherlands.*

Background: Since the introduction of lower doses of aspirin and better standardized control of oral anticoagulation (OAC) using INR, combined aspirin/OAC therapy has been evaluated against aspirin in large post MI trials. The risks of such a strategy have been a matter of concern, but have not been systematically evaluated against the benefit.
Methods: In the 5 randomized trials comparing OAC/aspirin with aspirin alone following unstable angina or MI (ATACS, CARS, CHAMP, APRICOT-2 and ASPECT-2 including 15,044 patients) death, reinfarction and stroke were recorded. Stroke classification (ischemic or hemorrhagic) was available in 155 stroke cases out of 6,027 patients evaluated.
Results: See table.
Conclusions: Coumadin on top of aspirin is beneficial with an acceptable bleeding risk: 3 death/reinfarctions are prevented at the cost of 1 major bleeding. The reduction of ischemic stroke is even larger with no excess hemorraghic strokes.

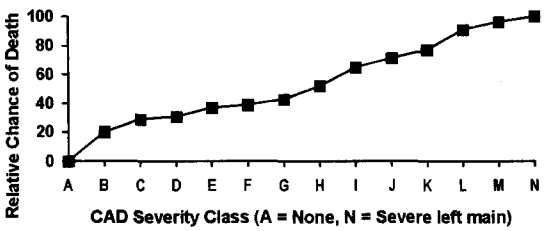
Results:	aspirin + coumadin (n=8,522)	aspirin (n=6,522)	RR	p
death/reinfarction	15.3 %	17.6 %	0.87 (0.81-0.93)	0.002
major bleeding	2.4 %	1.7 %	1.43 (1.14-1.80)	0.003
stroke	2.3 %	2.8 %	0.83 (0.60-1.14)	0.28
•ischemic	•1.8 %	•2.4 %	0.75 (0.53-1.06)	0.13
•hemorrhagic	•0.5 %	•0.5 %	1.07 (0.54-2.13)	0.99

1171-31

Predicting Survival From the Coronary Arteriogram: An Experience-Based Statistical Index of Coronary Artery Disease Severity

David F. Kong, Linda K. Shaw, Frank E. Harrell, Jr., Lawrence H. Muhlbaier, Kerry L. Lee, Robert M. Califf, Robert H. Jones, *Duke Clinical Research Institute, Durham, North Carolina.*

Background: For patients (pts) with coronary artery disease (CAD), accurate assessment of survival hinges on the coronary arteriogram. Classification by 0-, 1-, 2-, and 3-vessel disease (0123-vd) introduces error by grouping pts with heterogeneous prognoses together. A CAD severity index was developed to overcome this fundamental limitation.
Methods: We constructed a hierarchy of anatomic categories based upon the presence of mild (50-74%), significant (75-95%), and severe (>95%) lesions in each of the three coronary vessels. Left main (LM) and proximal left anterior descending coronary lesions were characterized separately. A Cox proportional hazards model fitted the relative weights of the categories using survival data from 29,082 pts catheterized at Duke Medical Center between 1986 - 1999 and treated without revascularization. Scaling each of the regression coefficients by the maximum coefficient (for severe LM disease) created a CAD severity index ranging from 0 to 100.
Results: The Duke CAD index separates pts into 14 classes. Cox model chi-square (X^2) was 2447 with 13 degrees of freedom for all-cause mortality. When applied as a linear score in pts with CAD, the Cox model X^2 was 6403 for the CAD index compared to 6024 for the 0123-vd method. The CAD index consistently performed better than the 0123-vd method in adjusted models.
Conclusion: This experience-based index facilitates prognostication, and creates a new benchmark for rational evaluation of percutaneous and surgical treatments for CAD.



1171-32

Plasma Levels of Oxidized Low Density Lipoprotein (Ox-LDL) Relate to Coronary Events After Angioplasty in Patients With Unstable Angina Pectoris

Hajime Yamashita, Shoichi Ehara, Takahiko Naruko, Kazuo Haze, Minoru Yoshiyama, Toshihiko Matsuo, Kazuhide Takeuchi, Junichi Yoshikawa, Makiko Ueda, *Department of Internal Medicine and Cardiology, Osaka City University Graduate School of Medicine, Osaka, Japan.*

Background: We have recently reported that plasma ox-LDL levels on admission relate directly to the severity of coronary syndromes, using a novel anti-ox-LDL monoclonal antibody and anti-apolipoprotein B antibody (Ehara et al: Circulation 2001; 103: 1955-1960). Moreover, immunohistochemical investigations of atherectomy specimens demonstrated that the surface area containing ox-LDL-positive macrophage was significantly higher in unstable angina pectoris (UAP) patients than in stable angina pectoris (SAP) patients. In this study, we investigated whether the plasma levels of ox-LDL at follow-up relate to follow-up angiographic outcomes in patients with UAP and SAP, undergoing percutaneous coronary intervention. **Methods and Results**: Plasma ox-LDL levels were measured in patients with 48 UAP and 37 SAP at the follow-up period. Coronary events rates (restenosis and new lesion) was 19% in SAP and 31% in UAP. In SAP patients, there was no difference in plasma ox-LDL levels between groups with and without coronary events. In UAP patients, however, plasma ox-LDL levels in the group with coronary events were significantly higher than in the group without coronary events (with coronary events: 1.23±0.78, without coronary events: 0.74±0.49 ng/ 5 μg LDL protein, mean±SD). **Conclusion**: Our results suggest that elevated plasma levels of ox-LDL relate to the progression of human coronary atherosclerotic lesions or the neointima formation in the patients with UAP.

1171-47

Mycoplasma Pneumoniae High IgA Titer but Not IgG Predicts Increased Hazard of Death or Myocardial Infarction Among Patients With Angiographically Defined Coronary Artery Disease

Tobin H. Lim, Joseph B. Muhlestein, John F. Carlquist, Bella Ohana, Mark Lipson, Benjamin D. Horne, Jeffrey L. Anderson, *LDS Hospital, Salt Lake City, Utah, Savyon Diagnostics, Ashdod, Israel.*

Background: Intracellular infectious agents, including *Chlamydia pneumoniae* and a variety of viruses, are linked to the development and/or progression of coronary artery disease (CAD). From a cross-sectional study of patients (pts) undergoing angiography, we reported that seropositivity to *Mycoplasma pneumoniae* (Mpn), another intracellular bacterium, also predicts the diagnosis of CAD. To further evaluate this association, we tested whether seropositivity to Mpn also predicts death or MI among CAD pts.
Methods: Blood samples were collected from 1,517 consenting pts with severe, angiographically-defined CAD (≥1 lesion of ≥70% stenosis). ELISA antibody levels (Savyon Diagnostics) were measured for Mpn IgG and IgA, and serologic status was assigned according to product specifications (negative, positive, or high-positive). Pts were followed to death (all-cause and cardiac), MI, or censor (mean=2.4±1.6 years, max=5.8 years) and data were analyzed by Cox proportional hazards regression.
Results: Average age was 65±11 years and 77% were male. Serologic findings for Mpn IgG were 61% negative, 36% positive, and 3.5% high-positive, and for IgA were 45%, 42%, and 13%, respectively. For IgG titers, events occurred in 21%, 20%, and 19% of negative, positive, and high-positive pts, respectively (all p=NS). For IgA, event rates were significantly higher for high positive vs. negative (26% vs. 16%, adjusted: p=0.04, hazard ratio [HR]=1.5, 95%CI=[1.1,2.1]), but not for simple positive vs. negative (20% vs. 16%, p=0.40, HR=1.2). Similar results were found for death due to cardiac causes (for high-positive vs. negative, adjusted HR=1.7, p=0.02). Other predictors of increased death/MI hazard were age, C-reactive protein, diabetes, renal failure, and number of diseased coronaries.
Conclusions: High *Mycoplasma pneumoniae* IgA serologic titer, which is suggestive of recent infection, independently and significantly predicts increased hazard of death or MI events in pts with severe, angiographically-defined CAD. This finding provides further evidence of an association between Mpn and CAD and adds to the number of intracellular infectious agents associated with coronary events.

1171-48

Sudden Death and Diabetes Mellitus: The Role of Parental Antecedents in the Paris Prospective Study I

Xavier X. Jouven, Beverley Balkau, Ludivine Andujar, Michel Desnos, Claude Guerot, Pierre Ducimetiere, *Inserm U258, Villejuif, France, HEGP, Paris, France.*

Objective: Diabetes mellitus and a parental history of sudden death are risk factors particularly associated with sudden death in the population. Since both diabetes mellitus and sudden death may be inherited, we assessed their relationship among two generations of men in a long-term cohort study.
Methods : 7746 subjects underwent ECG and physical examination conducted by a physician in standardized conditions, provided blood samples for laboratory tests, and answered questionnaires administered by trained interviewers. Diabetes mellitus was coded at inclusion if diabetes was declared by the subjects or fasting plasma glucose was >= 7 mmol/l. The vital status was obtained from specific inquiries until retirement and then by death certificates. Men with known ischemic heart disease were further excluded from analysis which was conducted on the 7079 remaining subjects.
Results : 496 men declared a paternal history of sudden death and 213 a paternal history of diabetes. The relative risk of sudden death was 1.9 in diabetic compared with nondiabetic fathers (p=0.001). Sudden death represented 20% of the total mortality, and myocardial infarction 10%.
After an average follow-up period of 23 years of the population, there were 2083 deaths, among which 603 cardiovascular deaths including 118 sudden deaths and 192 fatal myocardial infarctions. Among the 395 diabetic subjects, 169 were deceased, 48 from cardiovascular disease, 15 from sudden death (9%) and 12 from myocardial infarction(5%). The relative risk of sudden death was 2.5 in diabetic subjects compared with nondiabetic subjects (p=0.0007).
Conclusion : Diabetes mellitus is associated across generations with a particular high risk of sudden death.